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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,659	11/06/2001	Bengt Nilsson	625-9937	5137
20736	7590	10/26/2005	EXAMINER	
MANELLI DENISON & SELTER 2000 M STREET NW SUITE 700 WASHINGTON, DC 20036-3307			DUONG, THANH P	
			ART UNIT	PAPER NUMBER

1764

DATE MAILED: 10/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/937,659

Applicant(s)

NILSSON, BENGT

Examiner

Tom P. Duong

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 11-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

Responsive to Mr. Jeffrey Melcher telephone called on October 6, 2005, the office action mailed October 4, 2005 was inadvertently made final and according is withdrawn and the statutory period set therein vacated. A new office action on the merits/follows.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 11-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nilsson (6,062,547) in view of Kohl (4,773,918). Regarding claims 11-16, Nilsson '547 discloses a process for the recovery chemicals and energy the spent liquor obtained in the chemical pulping process (Col. 7, lines 56-60) comprising: gasifying the spent liquor (Col. 5, lines 5-7) under sub-stoichiometric conditions (Equations 1-6, Col. 3 and Col. 4) in a burner (Col. 5, lines 5-12) produce partly at least one phase of solid and/or fused material (Col. 6, lines 24-25) and partly at least one phase of a flammable gaseous material (Col. 5, lines 28-29); removing the phases from the burner (Col. 5, lines 26-28)

and separating the phases of solid and/or fused material (compound separated structure 2) from the phase of flammable gaseous material such that the solid and/or fused material is dissolved and collected as product liquid in a product liquid receiver (14); one or more cooling aqueous cooling media are contacted with combustion gas (Col. 5, lines 35-38), which cooling medium is at least partially vaporized or cracked to increase the calorific value of the flammable gaseous material and cooling medium is recovered in the chemical pulping process or in a process of chemicals and energy from the spent liquor (Col. 3, lines 38-45). Nilsson '547 fails to disclose the cooling medium (9) consists of an essentially water-free cooling medium. Kohl '918 teaches the essentially water-free cooling medium or gaseous fuels (oil, petroleum coke, natural gas, volatile hydrocarbons) can be added directly to the product gas to raise its heating value (Col. 7, lines 48-55). Thus, it would have been obvious in view of Kohl '914 to one having ordinary skill in the art to modify the gasification process of Nilsson '547 with the cooling medium as taught by Kohl '918 in order to increase the heating value of the product gas (flammable gaseous material). Note, the properties of gaseous fuels of Kohl '918 have a much lower temperature than the product gas (flammable gas material); thus, the gaseous fuels act as a cooling medium, which inherently cool the product gas. Regarding claim 17, Nilsson '547 discloses the contact between the flammable gaseous material and the product liquid is avoided (Col. 5, lines 35-36). Regarding claims 18 and 19, Nilsson '547 discloses the cooling medium (via nozzle 7) is sprayed into the mixture of solid and/or fused material and flammable gaseous material produced the gasification (Fig. 1), preferably connection the separation of these

two phases (Col. 6, lines 24-41) from each other. Regarding claim 20, Nilsson discloses the cooling is carried out a first stage (down-coming tube 2) in connection with the separation the material phases (solidified particles 5 and combustion gas) produced by gasification from each other, where after further cooling carried out in a second stage (cooling in second internal vessel 12, Col. 6, lines 61-67) with a second cooling medium consists essentially of water (Col. 7, lines 45-46). Regarding claim 21, Nilsson '547 discloses the separation in the separation forms a part of the total reaction vessel an essentially even temperature maintained, which temperature corresponds the gasification temperature (Col. 8, lines 1-15). Regarding claim 22, Nilsson '547 fails to disclose an inert gas is added above the product liquid receiver surface to form a protective blanket over the product liquid receiver to prevent carbonation boiling and splashing green liquor from the product liquid receiver. Kohl discloses the benefits of blowing the inert gas down the fuel bed to minimize entrainment of the solids in the gases rising from the fuel bed to create a distinct line of separation between zones (Col. 2, lines 5-9). Thus, it would have been obvious in view of the Kohl to one having ordinary skill in the art to modify the gasification process of the applied references with the inert gas in the fuel bed as taught by Kohl in order to gain the above benefits. Regarding claims 23 and 24, it is best understood by examiner (in view of Applicant's specification on page 5, lines 22-28) that Nilsson '547 discloses the aqueous water bath 11 in the second internal vessel 12 adjacent to the receiver liquor 14, and this aqueous water bath cools the solidified particles 5 prior to falling into the product receiving liquor 14 in the vessel 3.

### ***Response to Arguments***

Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive. (1) With respect to the argument that Kohl fails to teach the essentially-water free cooling medium is added to the hot gas stream after it has left the burner to thereby cool the exiting hot gas stream, Examiner respectfully disagrees. It is submitted that Kohl teaches the "heating value can be increased by adding fuel such as oil or petroleum coke into the gasification zone... and... gaseous fuel such as natural gas or volatile hydrocarbons can, of course, be added directly to the product gas to raise its heating value." The product gas (hot combustible gas which rises from the gasification zone 14) inherently leaves the gasification zone 14 or the product gas is above the burner 14. Thus, Kohl suggests that the gaseous fuel can be added at the burner stage and/or after the burner stage. Note, there is no distinctive advantage of adding the gaseous fuel in the burner or after the product leaves the burner, since adding gaseous fuel to the product gas either at the burner or after the burner increases the heating value to the product gas. Note, the properties of gaseous fuels of Kohl '918 have a much lower temperature than the product gas (flammable gas material); thus, the gaseous fuels act as a cooling medium, which inherently cool the product gas. Examiner agrees that the hot gas leaving the reactor is cooled by using water in the steam generator stage 68; however, this cooling stage takes place much further downstream of the gasification zone.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P. Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Duong  
September 28, 2005  
TD

*TD*



Glenn Caldarola  
Supervisory Patent Examiner  
Technology Center 1700